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Macfarlane

Industrial Philadelphia

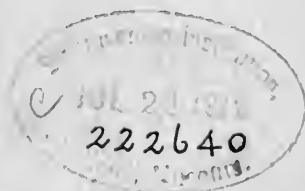




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INDUSTRIAL PHILADELPHIA



Published by
Foreign Trade Bureau
Philadelphia Commercial Museum
Philadelphia, U. S. A.
1912



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Industrial Philadelphia

From the Infant Industries of
Two Centuries Ago to the
Giant of Today

—BY—

JOHN J. MACFARLANE

LIBRARIAN AND STATISTICIAN

Philadelphia Commercial Museum

Reprint from
COMMERCIAL AMERICA
May, 1912

PRESS OF
PHILADELPHIA COMMERCIAL MUSEUM

THE manufacturing industries of Philadelphia began very soon after the arrival of Penn. Writing of the city in 1691 he said, "All sorts of paper are manufactured here in Germantown and very good fine German linen such as no person of quality need be ashamed to wear and very good druggets, besides other woollen cloths." The British Government tried to prevent manufacturing in the colony by strict laws. In his report one of the Governors of Pennsylvania spoke of flour, lumber, iron nails, hats, leather and clothing as being manufactured in Philadelphia, but only for domestic use, which seemed to satisfy the British Government. These industries increased during the Revolution and also after the Embargo Act of 1807 and during the War of 1812 owing to the breaking off of trade with Europe. Mease said in 1811: "Philadelphia has long been celebrated for her various manufactures and they have much increased in variety and extent since the late interruption of our foreign commerce." His recapitulation of the industries of Philadelphia shows that at that early date Philadelphia was celebrated for its manufactures of jewelry, textiles, cordage, leather, types and machinery, including steam engines. Philadelphia retained its position as the leading manufacturing city until 1860.

In the reports for 1904 and 1909 the Bureau of the Census omitted all establishments not operated on the factory system and all the so-called neighborhood and mechanical industries. In making comparisons with the census of 1899 and previous years it is well to bear this fact in mind. According to the method in use prior to 1904 Philadelphia, in 1899, had 15,887 establishments employing 246,445 wage earners with an output valued at \$603,466,000, while according to the method now in use there were in 1899 only 7,503 establishments employing 214,755 wage earners with an output valued at \$519,982,000. The omission of more than one-half the number of establishments reduced the value of the output only 14 per cent and the number of employees only 13 per cent.

The following table gives a comparison of some of the leading items for Philadelphia in the reports for the last three census years, omitting all establishments not operated on the factory system:

	No. of Establish- ments	Capital	Value of Products	Wage Earners	Wages
1909 . .	8,379	\$691,397,000	\$746,076,000	251,884	\$126,381,000
1904 . .	7,087	520,179,000	591,388,000	228,899	107,640,000
1899 . .	7,503	445,725,000	519,982,000	214,775	94,737,000

During the ten years the value of the products increased \$226,000,000. From 1899 to 1904 the increase was \$71,000,000 and from 1904 to 1909 it was \$144,000,000, or twice

as much as in the preceding five years. This increase occurred notwithstanding the fact that 1909 was an unusually lean year, manufacturers not having fully recovered from the effects of the panic of 1907. In 1909 the average wage was \$500 a year, or 13 per cent more than in 1899.

The value of the output of the manufacturing industries of Philadelphia in 1909 is greater than that of any other city in the United States, excepting New York and Chicago, and is also greater than that of any state, excepting New York, Pennsylvania, Illinois, Massachusetts, Ohio and New Jersey. A large part, if not all, of the excess in the value of manufactures in New York and Chicago is due to the aggregation of smaller industries resulting from their large population. Philadelphia has a greater number of establishments employing a large number of wage earners than any other city.

The industries which produce manufactured products from raw materials, like cotton, wool, iron and leather, are represented in Philadelphia by a large number of establishments. The names of many of these firms are almost synonymous with the products they manufacture. The mention of locomotives suggests the name of Baldwin; of ships, that of Cramp; of saws, that of Disston; of hats, that of Stetson; and so we might continue with a number of other articles made in Philadelphia that are associated everywhere with the names of Philadelphia manufacturers.

The manufacture of textiles is the most important industry in Philadelphia. The value of these industries is \$160,000,000, or over one-fifth that of all industries. Nearly one-third of all the wage earners are employed in the textile mills, a majority of whom are females. The value of the output of the separate textile industries is as follows, given in millions of dollars:

Woolen and worsted goods.	54.9	Silk and silk goods	6.5
Hosiery and knit goods	23.9	Dyeing and finishing textiles	6.3
Carpets and rugs	22.6	Millinery and lace goods	5.0
Cotton goods	22.6	Cordage and twine	3.3
Felt hats	10.4		
			<hr/>
			155.5

To this should be added oilcloth, estimated at about \$5,000,000, and a few smaller industries of less value.

The value of the textiles made in Philadelphia is greater than the combined value of any other two cities in the United States. This preeminence is due largely to the fact that it was settled by Germans, who had been skilled in these industries in their homeland. This created a textile center to which later weavers from England and Scotland and the north

of Ireland naturally came, because they could here find a market in which their skill could be used to advantage.

According to the census, the leading textile industry in 1909 was the manufacture of woolen and worsted goods, including felt goods and wool hats. The value of the output of this industry in that year was \$54,922,000, or \$20,000,000 more than in 1899, an increase of 58 per cent. Philadelphia leads all the cities of the United States in the manufacture of this class of goods. The highest grades of both woolens and worsteds are made here. This city is also the great center for the manufacture of yarns for the carpet and other woolen industries. In the manufacture of worsted yarns it has already overtaken Bradford, England. Philadelphia is one of the large wool markets of this country as a walk along Front Street, the wool center, would indicate. One-fifth of all the wool used in the manufacturing industries of the United States is consumed in Philadelphia.

In the manufacture of hosiery and knit goods Philadelphia far exceeds any other city in the value of its output. In 1909 it was \$23,971,000, or \$10,870,000 more than in 1899, an increase of 83 per cent in ten years. This industry was first introduced by the Germans at Germantown over two hundred years ago. A century later English weavers brought over their improved frames and settled in the same locality where they soon secured the bulk of the trade. In 1825 the first knitting mill in the United States was established by Thomas R. Fisher at Fisher's Hollow, Germantown. In 1910, of the two hundred and thirty hosiery and knitting mills in Philadelphia, one hundred and twenty-five were engaged in manufacturing hosiery and one hundred and five in making underwear. The output of these mills was about 70 per cent of that of all of Great Britain.

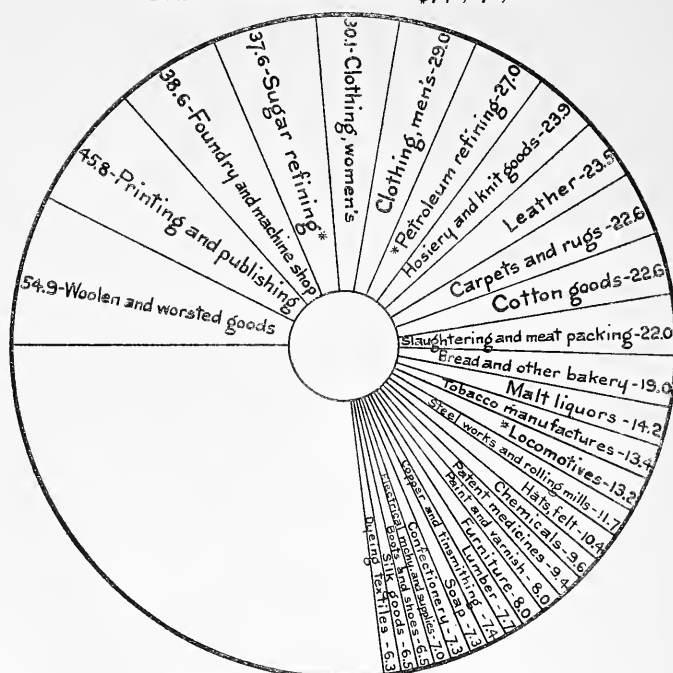
Philadelphia is known the world over as a great carpet manufacturing center. The first carpets manufactured in the United States were made in 1791 by Sprague, who produced a hand-made tufted carpet adorned with patriotic emblems for the floor of the United States Senate. Hamilton, in order to encourage this industry, had a tariff of from five to seven per cent laid on all such imported stuffs and this was the beginning of the policy of tariff for the protection of home industries that has done so much to develop manufacturing in the United States, so that today it is the greatest manufacturing country in the world. The early carpet mills took up the manufacture of oilcloth and had little or no effect on the later development of the carpet industry.

The present carpet industry had its origin between 1830 and 1860 when the large immigration of weavers from Great

PHILADELPHIA MANUFACTURES

CENSUS OF 1909

Total Value of Products—\$746,076,000



Values by industries given in millions of dollars

Cars by steam railroad companies	5.3	Umbrellas and canes	2.0
Oilcloth	*5.0	Stoves and fixtures	2.0
Millinery and lace goods	5.0	Clocks and watches	1.9
Street railway cars	*4.2	Bricks and tiles	1.8
Fertilizers	4.2	Shoddy	1.8
Paper and wood pulp	4.1	Babbitt metal	1.7
Brass and bronze products	4.0	Wall paper	1.7
Shipbuilding	*4.0	Cutlery	1.6
Leather goods	3.9	Ice	1.6
Boxes, fancy and paper	3.8	Files	1.5
Paper goods, n. e. s.	3.5	Glass	1.3
Marble and stonework	3.4	Artificial flowers	1.3
Cordage	3.3	Fancy articles, n. e. s.	1.2
Saws	*3.0	Smelting and refining	1.2
Flour and grist mill products	2.8	Buttons	1.1
Canning and preserving	2.5	Steam packing	1.1
Carriages and wagons	2.3	Brooms and brushes	1.1
Cooperage and wooden ware	2.2	Belting	1.1
Gas and electric fixings	2.1	Mattresses	1.0
Dentists' materials	2.1	Ink	1.0
		Fur goods	1.0

* Estimated

[Six]

Britain, settling largely in Kensington, brought about the rapid increase in the manufacture of carpets, more especially ingrain. Today Philadelphia makes more carpets than the whole of Great Britain. In 1904 the value of the carpets made in Philadelphia was \$25,233,000, but there was a falling off in the returns for 1909 of over \$2,600,000, making the

PHILADELPHIA MANUFACTURES

CENSUS OF 1909
Wage Earners—251,884



Number in various industries given in thousands

total \$22,629,000. This was due to the fact that Japanese and other matting was taking the place of the cheaper ingrain which were largely manufactured in Philadelphia. The manufacturers are now shifting their lines from ordinary ingrain carpets to art squares, rugs and higher priced carpets and will soon reach the higher value of 1904, if they have not already done so in 1911.

Philadelphia, though settled by Penn sixty years after New England, early held a prominent place in the manufacture

MANUFACTURING INDUSTRIES OF PHILADELPHIA—1909 CENSUS

	Value of Products Thousands of Dollars		Establishments	Wage Earners		Wages
	1899	1904	1909	1909	1909	1909
Boots and shoes	6,395	5,386	58	3,466	\$1,594,000	
Boxes, fancy and paper	2,413	3,037	65	3,379	1,113,000	
Brass and bronze products	3,515	2,428	49	1,042	625,000	
Bread and other bakery products	10,465	14,440	28	4,598	2,592,000	
Carpets and rugs other than rag	21,986	25,233	84	10,363	4,722,000	
Cars by steam railroad companies	3,651	4,673	10	3,669	2,527,000	
Chemicals	7,810	8,452	16	1,753	1,046,000	
Clothing, men's, including shirts	22,629	23,642	456	12,215	5,962,000	
Clothing, women's	9,452	12,871	351	13,500	6,574,000	
Confectionery	4,355	5,557	129	2,891	1,000,000	
Copper and tinsmithing	3,300	5,470	134	2,939	1,559,000	
Cordage and twine	6,162	4,121	8	1,163	429,000	
Cotton goods including small wares	17,620	17,463	157	9,783	4,453,000	
Dyeing and finishing textiles	5,562	4,371	104	3,575	1,829,000	
Electrical machinery and supplies	4,231	5,066	45	1,759	923,000	
Fertilizers	2,376	2,597	6	764	375,000	
Foundry and machine shop products	32,955	38,685	545	17,141	10,135,000	
Furniture and refrigerators	4,517	5,452	147	3,393	1,940,000	
Hats, fur and felt	3,075	5,348	27	5,825	3,101,000	
Hosiery and knit goods	13,074	15,825	177	15,999	5,753,000	
Iron and steel works and rolling mills	7,209	7,095	8	4,821	2,774,000	
Leather goods	2,708	3,671	84	1,707	781,000	
Leather, tanned, curried and finished	18,187	23,903	41	5,972	3,009,000	
Liquors, malt	12,607	12,315	48	1,857	1,443,000	
Lumber and timber products	5,155	5,243	98	3,248	1,812,000	
Marble and stone work	2,057	2,476	9	1,619	1,089,000	
Millinery and lace goods	1,446	2,132	90	2,770	956,000	
Paint and varnish	7,447	6,949	50	1,197	689,000	
Paper and wood pulp	2,616	2,921	7	1,301	629,000	
Paper goods, not elsewhere specified	1,188	1,651	31	1,311	518,000	
Patent medicines and druggists' preparations	7,445	7,371	174	2,140	879,000	
Printing and publishing	26,749	35,205	931	13,681	8,249,000	
Silk and silk goods	4,532	5,079	32	3,056	1,235,000	
Slaughtering and meat packing	12,096	12,922	81	7,099	793,000	
Soap	2,176	5,770	32	1,109	383,000	
Tobacco manufactures	8,991	8,655	496	6,545	2,650,000	
Woolen and worsted goods	34,582	39,258	131	19,177	7,996,000	
All other	209,643	204,385	2,191	2,191	32,229,000	
Total	\$19,962	\$91,388	8,379	251,884	\$126,381,000	

of cotton goods. The first spinning jenny in the United States was exhibited in Philadelphia and the first company for manufacturing cotton goods was organized in Philadelphia in 1775. The first calico printing was by John Hewson in 1789 in Philadelphia.

The value of the output of cotton goods in 1909 was \$22,603,000, an increase of \$5,000,000 in ten years. There are several New England cities that exceed Philadelphia in the value of cotton manufactures. Philadelphia makes a comparatively small amount of piece goods, the value of its products being made up mainly of that of the decorative class of cotton goods, such as tapestries, upholstery materials and laces. It leads all other cities in the United States in the manufacture of this class of goods. The first serious attempt to manufacture laces in the United States was at the Bromley Lace Works in Philadelphia.

The manufacture of hats is an old Philadelphia industry. In earlier days the Germantown beaver hat was well known in all parts of the United States. This industry has made rapid progress during the last ten years, so that Philadelphia today leads all other cities in the value of its hats. In 1909 this value was \$10,402,000, nearly double as much as in 1904 and over three times as much as in 1899. Today Philadelphia hats are known abroad as well as in other parts of the United States. During the Boer War General Baden Powell had his troops equipped with Stetson hats.

The first silk trimmings manufactured in the United States were made in Philadelphia by W. H. Horstman in 1815. While Pennsylvania makes nearly as much silk as New Jersey, most of the mills are scattered throughout the State, in Scranton and other towns. One of the largest silk mills in the State is the Sauquoit Mills in Philadelphia. The value of the silk goods manufactured in Philadelphia in 1909 was \$6,500,000, or \$2,000,000 more than ten years before.

The Philadelphia cordage industry which once ranked first has fallen off very much during the last ten years. In 1909 the value of its products was \$3,325,000, or a little more than one-half what it was ten years before.

Owing to the fact that there are only two firms manufacturing oilcloth in Philadelphia, no values are given in the census tables. A fair estimate of the value of their products would be about \$5,000,000.

While not strictly a textile industry, the manufacture of clothing is closely allied. The value of the clothing made for women in Philadelphia has increased from \$9,400,000 in 1899 to \$30,100,000 in 1909. Clothing for men has increased from \$22,700,000 in 1899 to \$29,000,000 in 1909. Philadelphia

ranks far behind New York in the manufacture of clothing both for men and women.

The iron and steel industry ranks next in value to that of textiles. In 1909 it amounted to nearly \$100,000,000, it being impossible to give exact figures as the values for some of the leading industries under this head are not given in the census tables. The most important class covers foundry and machine shop products, the value of which in 1909 was \$38,685,000. Philadelphia is well known for its manufacture of machine tools and machinery for all the various industries carried on in the city and elsewhere. The value of the locomotives made in Philadelphia may be set down as averaging \$15,000,000 annually. Although the census gives no values for Philadelphia locomotives, information from other sources shows that in 1909 there were 1,015 locomotives, valued at \$13,200,000, manufactured by the Baldwin Locomotive Works, and of these 140 were exported, valued at \$1,370,000. This value is below the average, as 1909 was a lean year.

Iron and steel rolling mill products to the value of \$11,789,000 were manufactured in 1909, the Midvale Steel Works being the largest manufacturers in this line. In iron and steel shipbuilding, the Cramps are celebrated all over the world, having built men-of-war for many foreign nations, such as Russia and Japan, as well as a large number of vessels for the navy and merchant marine of the United States. The values for this industry are also omitted from the census tables, but the output of the shipyards on the Delaware at Philadelphia was about \$4,000,000. Saws, for which the Disstons are celebrated, are turned out by Philadelphia saw makers, to the value of about \$3,000,000. The manufacture of iron pipe, hardware, cutlery and a number of other lines would add considerably to the total value of this class of goods.

The value of paper and printing and publishing, with their allied industries, is about \$60,000,000. The first paper manufactured in the United States was in 1790 at the Rittenhouse mill on Paper Mill Run near Germantown. This was forty years before any paper was made in New England. The Willcox Mills, just below Philadelphia, manufactured the paper for the Continental money and also for the greenbacks during the Civil War. The change from rags to woodpulp in the manufacture of paper caused Philadelphia to lose its preeminence in this line. In 1909 the value of the paper manufactured was \$4,122,000, against \$2,636,000 ten years before, showing that the industry is now increasing.

Philadelphia's publishing industry started four years after the landing of Penn. Sauer's German Bible printed in

Germantown in 1743 was the first in any European language published in America, and the first English Bible with an American imprint was by Aiken in Philadelphia in 1789. For a long time Philadelphia was the leading publishing center of the United States, but it has long since lost that position, although it is still prominent as a publisher of medical and law books. The value of the printing and publishing output during 1909 was \$45,807,000, or \$19,000,000 more than ten years before.

The value of the products of the chemical industries of Philadelphia in 1909 was about \$45,000,000. These industries started early, the manufacture of sulphuric acid having been carried on since 1793, when the firm of Harrison Brothers was started. The value of chemicals used in manufacturing and of drugs was \$9,643,000. The manufacture of patent medicines and druggists' preparations is also a large industry and the names of Philadelphia firms in both of these lines are well known throughout the world. The value of these made in 1909 was \$9,423,000. The manufacture of paint and varnish is also carried on extensively in Philadelphia. Several of the largest firms have their plants outside of the city so that Philadelphia is a much more important paint center than the census values would indicate. The manufacture of white lead was started in 1804 by Samuel Wetherill. The first factory is said to have been burnt down at the instigation of English rivals to prevent the starting of the industry. The value of paint and varnish in 1909 was \$8,045,000. The manufacture of fertilizers is carried on extensively in Philadelphia, the value in 1909 being \$4,268,000.

Two other industries not usually thought of as chemical industries, but closely allied to them, are sugar refining and petroleum refining. These are both large industries, but as there are only a few establishments census values are not available. An estimate by a prominent sugar expert gives the value of sugar refined in Philadelphia as \$37,683,000. The value of the petroleum refined in Philadelphia is not available but a rough estimate would make it at least \$27,000,000.

The value of the products of the leather industry of Philadelphia in 1909 was over \$35,000,000. From the earliest period the manufacture of leather has been an important Philadelphia industry. This city leads all others in the manufacture of leather and is the great center for the morocco and the glazed kid industry. A number of Philadelphia manufacturers have achieved fame and fortune through their success in producing various brands of glazed kid, of which more than one-half is made in Philadelphia. The value of the leather tanned, curried and finished in Philadelphia in

1909 was \$23,526,000. This was \$5,000,000 more than in 1899, but a little less than in 1904.

The value of the boots and shoes made in Philadelphia in 1909 was \$6,517,000. A number of New England cities far exceed this value, but Philadelphia exceeds any other city in the value of high grade shoes for women. Leather goods to the value of \$3,994,000 were made in 1909.

In malt liquors, in the manufacture of which Philadelphia once held first rank, the value of Philadelphia's production in 1909 was \$14,257,000. Tobacco manufactures have increased almost 50 per cent in value during the last decade, the value in 1909 being \$13,429,000 and in 1904, \$8,991,000.

Slaughtering and meat packing has increased over 80 per cent, the value in 1909 being \$22,079,000 against \$12,000,000 in 1899, all of this increase having taken place during the last five years. Bread and bakery products have also increased about the same ratio, the value in 1909 being \$19,018,000 against \$10,400,000, showing that a larger percentage of families have ceased making their bread at home.

Cars by steam railroad companies to the value of \$5,318,000 were built in 1909. The value of the cars for use on street railways in 1910 was \$4,200,000. The latter were all built at the Brill Works in West Philadelphia, which supply cars not only for cities in the United States, but also for many foreign cities. The sight of one of their cars in Australia, South Africa, Argentina or India makes the Philadelphian realize how Philadelphia-made products are found in the uttermost parts of the earth.

All other industries given in the census in which the value in 1909 was over a million dollars are referred to either in the chart or the table. The chart of the number of wage earners unfortunately is not complete as in a number of important industries, like sugar refining, petroleum refining, the manufacture of locomotives, iron ships and saws, employing large numbers of people, no figures are available. Of the 251,884 wage earners in Philadelphia 71,000 are engaged in the manufacture of textiles and 25,000 in the manufacture of clothing, or about 40 per cent of all the wage earners in the manufacturing industries of Philadelphia.

THE PHILADELPHIA COMMERCIAL MUSEUM

is a public institution, developed and controlled by a Board of Trustees, created by City Councils, responsible to the Mayor of Philadelphia. It is located along the Schuylkill River, in that part of the city known as West Philadelphia, occupying three buildings with a floor space of 200,000 square feet. The institution is supported by appropriations by the City of Philadelphia and the State of Pennsylvania and by nominal fees charged the manufacturers of the country making systematic use of its services.

The objects of the Philadelphia Commercial Museum are to disseminate in this country a wider knowledge and appreciation of the customs and conditions of other nations and peoples, and to promote commerce of the United States with foreign countries. The institution conducts its work through three administrative divisions: the Foreign Trade Bureau, the Commercial Library and the Scientific Department.

THE FOREIGN TRADE BUREAU

has for its sole object the development of the international commerce of the United States. It does this by encouraging individual manufacturers who are equipped to handle the business, to extend the market for their wares to foreign countries, and then by assisting them in a very practical manner in inaugurating and developing that trade. The assistance given is in the nature of live and practical information on every phase of export trade—its elementary features as well as its technicalities. Large and increasing numbers of inquiries are received daily from foreign firms asking for the names of makers of particular lines of goods in the United States, and asking to be placed in touch with the proper manufacturers. Inquiries of this nature are always cordially invited; they are promptly answered and without charge. The Bureau also has a publication service issuing regularly two journals. *Commercial America*, published in both English and Spanish, circulates abroad with the purpose of inviting the attention of foreign merchants to the advantages of the United States as a country in which to purchase goods. *The Weekly Export Bulletin* is a confidential publication, circulating only among subscribers to the Bureau, with the purpose of informing them of the wants of foreign importers and merchants.

THE COMMERCIAL LIBRARY

is a practical consulting commercial library. On file are the official statistics and similar documents of nearly all foreign countries, the consular reports of all countries which publish the same, books on general commercial topics, directories of foreign cities and industries, and a large number of the best trade journals published throughout the world. This library is one of the most complete of its kind in the world, of great assistance to the manufacturer and business man, and invaluable to the staff of the institution.

THE SCIENTIFIC DEPARTMENT

is charged with the very important educational and strictly museum work of the institution, a work which it does through exhibits, miniature museums and lectures. The exhibits installed in the main buildings of the institution cover the commercial materials of the world, the imports and exports, and manners and customs of foreign countries. The main purpose of these exhibits is to portray in a vivid fashion the products and peoples of foreign lands. There have been distributed among the schools of the state 1,500 miniature museums, comprising commercial products, photographs, maps, etc. There has also been developed a system of daily illustrated lectures to the schools, delivered in the Lecture Halls of the institution by members of the staff. Free illustrated public lectures on topics which appeal to the business man are held weekly during a large part of the year.

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